FLUVIEW

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

2014-2015 Influenza Season
Week 46 ending November 15, 2014
All data are preliminary and may change as more reports are received.

Synopsis: During week 46 (November 9-15, 2014), influenza activity was low in the United States.

- **Viral Surveillance**: Of 10,304 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 46, 955 (9.3%) were positive for influenza.
- **Pneumonia and Influenza Mortality**: The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold.
- **Influenza-associated Pediatric Deaths**: No influenza-associated pediatric deaths were reported.
- **Outpatient Illness Surveillance**: The proportion of outpatient visits for influenza-like illness (ILI) was 1.6%, which is below the national baseline of 2.0%. All 10 regions reported ILI below region-specific baseline levels. Puerto Rico experienced high ILI activity; two states experienced low ILI activity; New York City and 48 states experienced minimal ILI activity; and the District of Columbia had insufficient data.
- **Geographic Spread of Influenza**: The geographic spread of influenza in Puerto Rico and five states was reported as regional; 21 states reported local activity; the District of Columbia, the U.S. Virgin Islands, and 23 states reported sporadic activity; one state reported no influenza activity; and Guam did not report.

National and Regional Summary of Select Surveillance Components

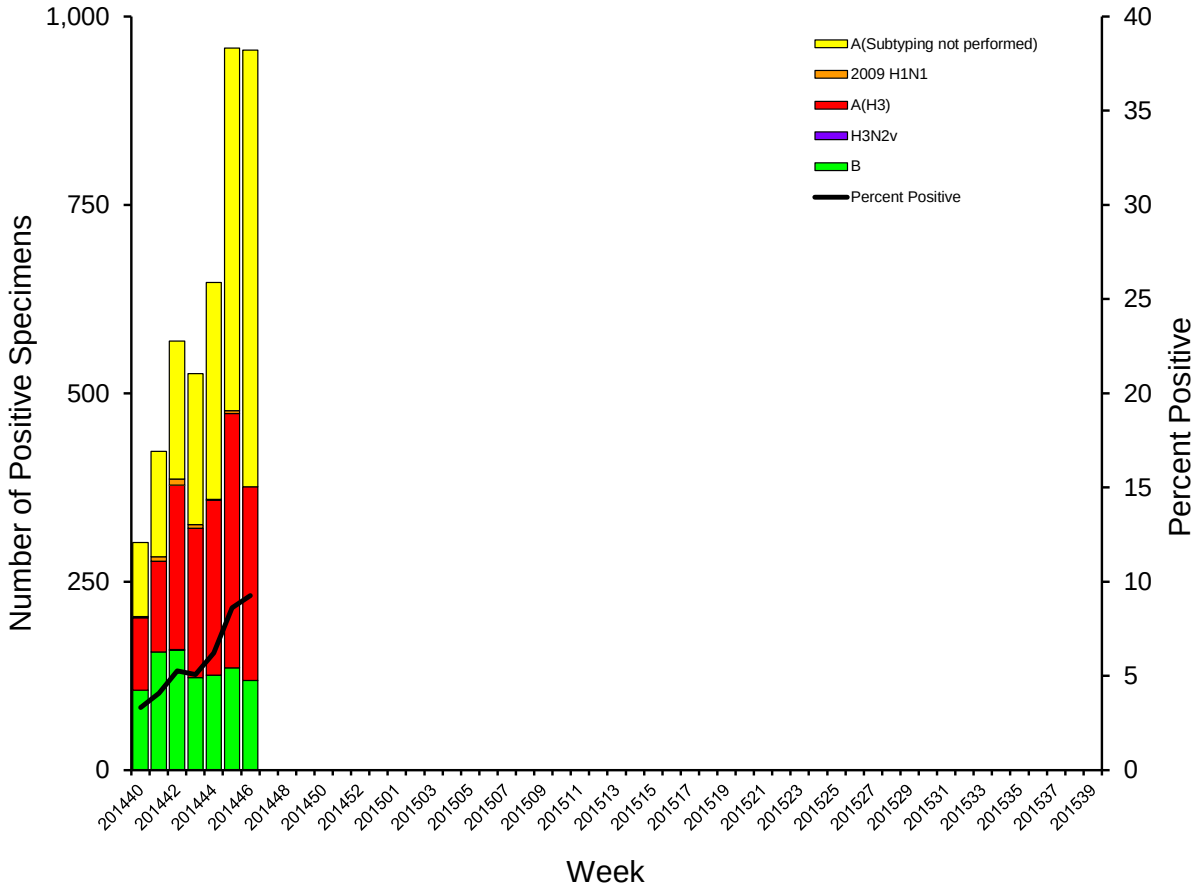
	Data cumulative since September 28, 2014 (week 40)							
HHS Surveillance Regions*	**Out-patient ILI†**	**% positive for flu‡**	**Number of jurisdictions reporting regional or widespread activity§**	**2009 H1N1**	**A (H3)**	**A (Subtyping not performed)**	**B**	**Pediatric Deaths**
Nation	Normal	9.3%	6 of 54	26	1,458	1,969	926	1
Region 1	Normal	1.2%	1 of 6	1	17	14	14	0
Region 2	Normal	0.9%	1 of 4	6	92	15	26	0
Region 3	Normal	3.9%	0 of 6	0	77	50	33	0
Region 4	Normal	11.0%	1 of 8	2	276	1,114	527	1
Region 5	Normal	7.6%	0 of 6	9	132	230	39	0
Region 6	Normal	14.0%	2 of 5	2	257	363	185	0
Region 7	Normal	4.6%	0 of 4	1	63	36	34	0
Region 8	Normal	4.3%	0 of 6	0	66	46	19	0
Region 9	Normal	3.8%	0 of 5	4	116	57	39	0
Region 10	Normal	18.2%	1 of 4	1	362	44	10	0

*http://www.hhs.gov/iea/regional/
† Elevated means the % of visits for ILI is at or above the national or region-specific baseline.
‡ National data are for current week; regional data are for the most recent three weeks.
§ Includes all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands.

U.S. Virologic Surveillance: WHO and NREVSS collaborating laboratories located in all 50 states, Puerto Rico, and the District of Columbia report to CDC the number of respiratory specimens tested for influenza and the number positive by influenza virus type and influenza A virus subtype. The results of tests performed during the current week are summarized in the table below.

	Week 46
No. of specimens tested	10,304
No. of positive specimens (%)	955 (9.3%)
Positive specimens by type/subtype	
Influenza A	836 (87.5%)
2009 H1N1	0 (0.0%)
H3	257 (30.7%)
Subtyping not performed	579 (69.3%)
Influenza B	119 (12.5%)

Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2014-15



Antigenic Characterization*: CDC has antigenically characterized 52 influenza viruses (one 2009 H1N1 virus, 34 influenza A (H3N2) viruses, and 17 influenza B viruses) collected by U.S. laboratories since October 1, 2014 by hemagglutination inhibition (HI).

- **2009 H1N1 [1]:** The 2009 H1N1 virus tested was characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2014-2015 Northern Hemisphere influenza vaccine.

- **Influenza A (H3N2) [34]:** 19 (56%) of the 34 influenza A (H3N2) viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine. 15 (44%) of the 34 viruses tested showed reduced titers with antiserum produced against A/Texas/50/2012. Among viruses that showed reduced titers with antiserum raised against A/Texas/50/2012, the majority were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable, from the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in small numbers in March of 2014 and began to circulate in greater numbers over the spring and summer.

Influenza B [17]: Ten (58.8%) of the influenza B viruses tested belong to B/Yamagata/16/88 lineage and the remaining seven (41.2%) influenza B viruses tested belong to B/Victoria/02/87 lineage.

- **Yamagata Lineage [10]:** All ten B/Yamagata-lineage viruses were characterized as B/Massachusetts/2/2012-like, which is included as an influenza B component of the 2014-2015 Northern Hemisphere trivalent and quadrivalent influenza vaccines.

- **Victoria Lineage [7]:** All seven B/Victoria-lineage viruses were characterized as B/Brisbane/60/2008-like, the virus that is included as an influenza B component of the 2014-2015 Northern Hemisphere quadrivalent influenza vaccine.

*CDC conducts antigenic characterization of influenza viruses year-round to compare how similar currently circulating influenza viruses are to those included in the influenza vaccine, and to monitor for changes in circulating influenza viruses.

Antiviral Resistance: Testing of 2009 H1N1, influenza A (H3N2), and influenza B virus isolates for resistance to neuraminidase inhibitors (oseltamivir and zanamivir) is performed at CDC using a functional assay. Additional 2009 H1N1 and influenza A (H3N2) clinical samples are tested for mutations of the virus known to confer oseltamivir resistance. The data summarized below combine the results of both testing methods. These samples are routinely obtained for surveillance purposes rather than for diagnostic testing of patients suspected to be infected with antiviral-resistant virus.

High levels of resistance to the adamantanes (amantadine and rimantadine) persist among 2009 influenza A (H1N1) and A (H3N2) viruses (the adamantanes are not effective against influenza B viruses). Therefore, data from adamantane resistance testing are not presented below.

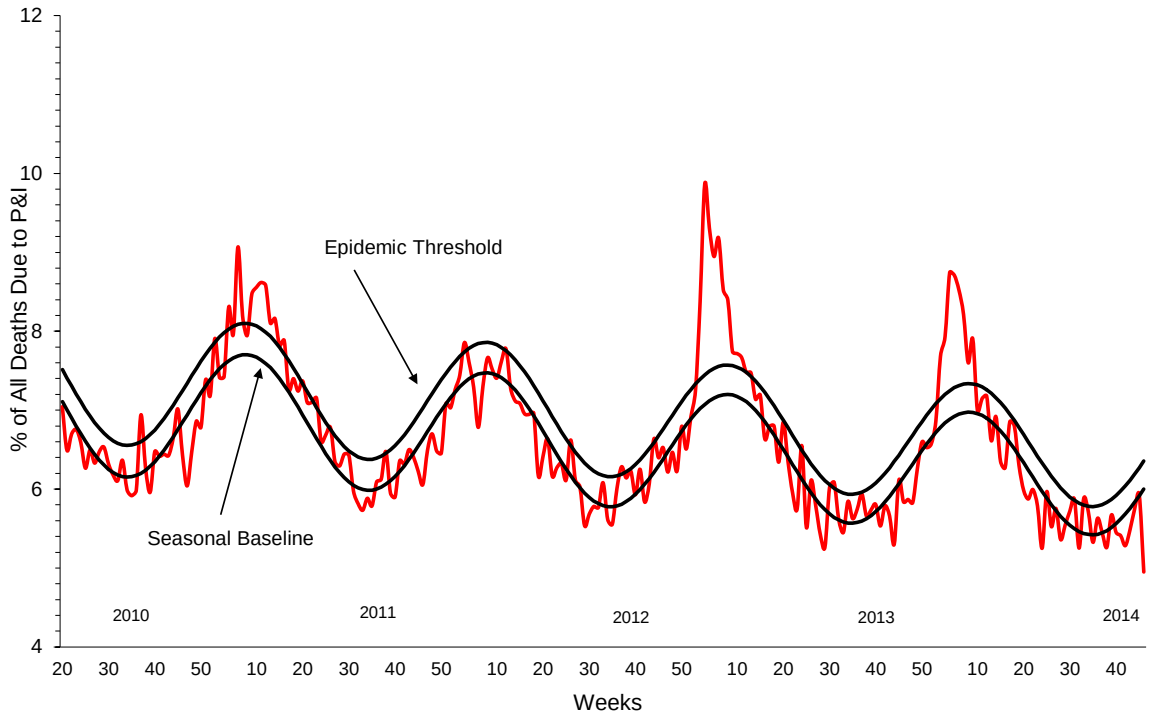
Neuraminidase Inhibitor Resistance Testing Results on Samples Collected Since October 1, 2014

	Oseltamivir		Zanamivir	
	Virus Samples tested (n)	**Resistant Viruses, Number (%)**	**Virus Samples tested (n)**	**Resistant Viruses, Number (%)**
Influenza A (H3N2)	15	0 (0.0)	15	0 (0.0)
Influenza B	7	0 (0.0)	7	0 (0.0)
2009 H1N1	2	0 (0.0)	2	0 (0.0)

In the United States, all recently circulating influenza viruses have been susceptible to the neuraminidase inhibitor antiviral medications, oseltamivir and zanamivir; however, rare sporadic instances of oseltamivir-resistant 2009 H1N1 and A (H3N2) viruses have been detected worldwide. Antiviral treatment with oseltamivir or zanamivir is recommended as early as possible for patients with confirmed or suspected influenza who have severe, complicated, or progressive illness; who require hospitalization; or who are at high risk for serious influenza-related complications. Additional information on recommendations for treatment and chemoprophylaxis of influenza virus infection with antiviral agents is available at http://www.cdc.gov/flu/antivirals/index.htm.

Pneumonia and Influenza (P&I) Mortality Surveillance: During week 46, 5.0% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.4% for week 46.

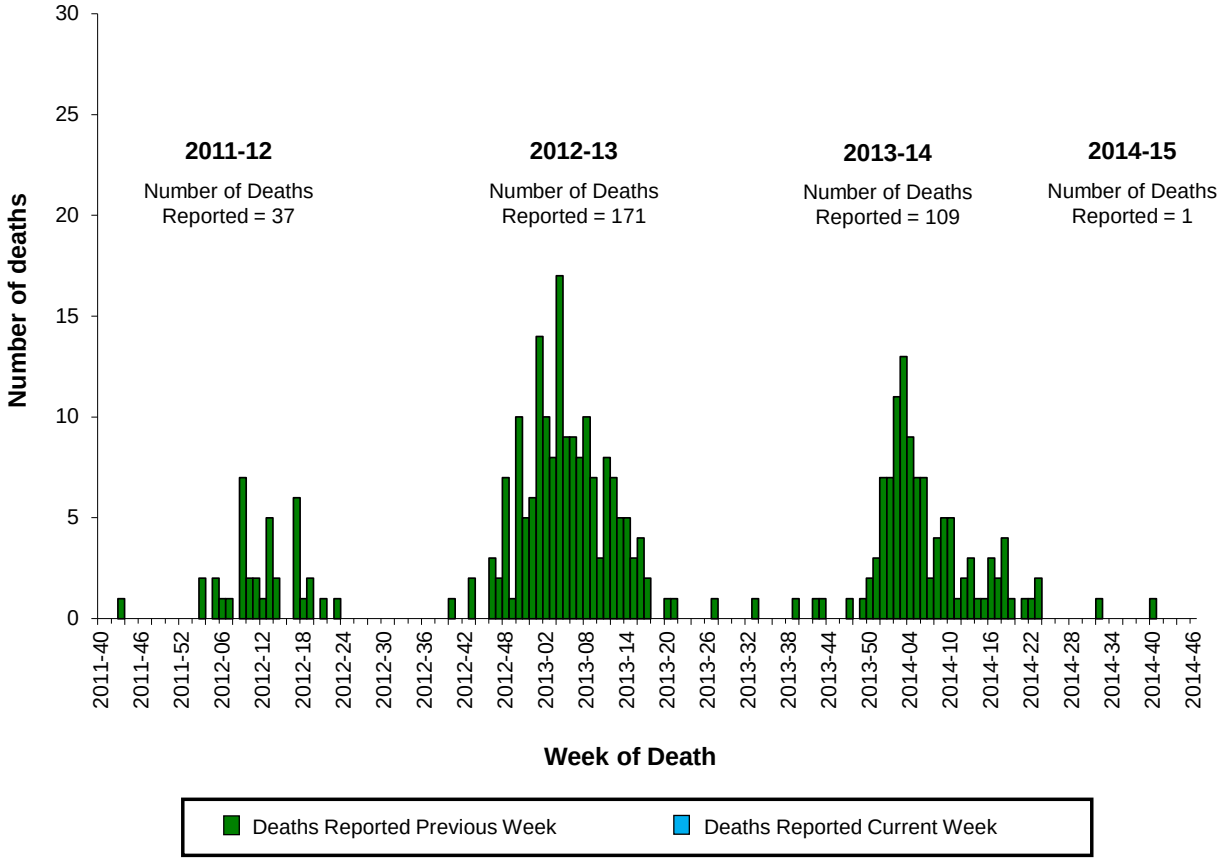
Pneumonia and Influenza Mortality for 122 U.S. Cities
Week ending November 15, 2014



For the 2014-2015 influenza season, CDC/Influenza Division and the National Center for Health Statistics (NCHS) are collaborating on a pilot project to use NCHS mortality surveillance data for the rapid assessment of pneumonia and influenza (P&I) mortality. To view the data, please click here.

Influenza-Associated Pediatric Mortality: No influenza-associated pediatric deaths were reported to CDC during week 46. To date, one influenza-associated pediatric death has been reported for the 2014-2015 season.

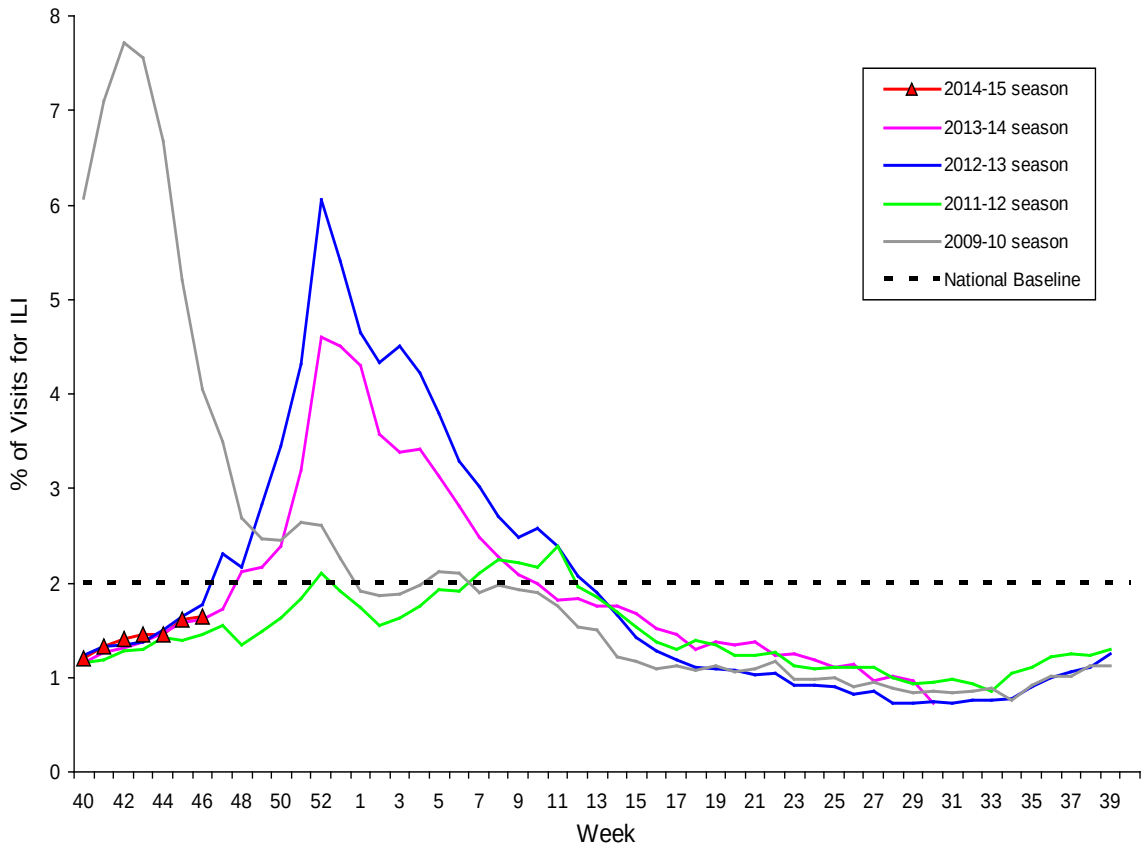
Number of Influenza-Associated Pediatric Deaths by Week of Death: 2011-2012 season to present



Influenza-Associated Hospitalizations: The Influenza Hospitalization Surveillance Network (FluSurv-NET) conducts all age population-based surveillance for laboratory-confirmed influenza-related hospitalizations in select counties in the Emerging Infections Program (EIP) states and Influenza Hospitalization Surveillance Project (IHSP) states. FluSurv-NET estimated hospitalization rates will be updated weekly starting later this season. Additional FluSurv-NET data can be found at: http://gis.cdc.gov/GRASP/Fluview/FluHospRates.html and http://gis.cdc.gov/grasp/fluview/FluHospChars.html.

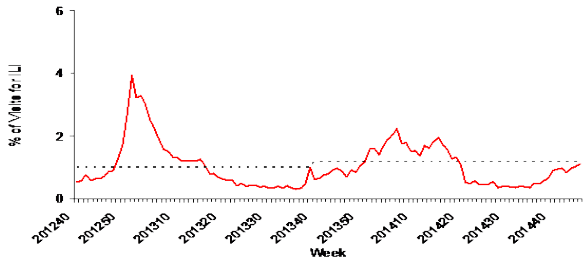
Outpatient Illness Surveillance: Nationwide during week 46, 1.6% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.0%. *(ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and cough and/or sore throat.)*

Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), Weekly National Summary, 2014-2015 and Selected Previous Seasons

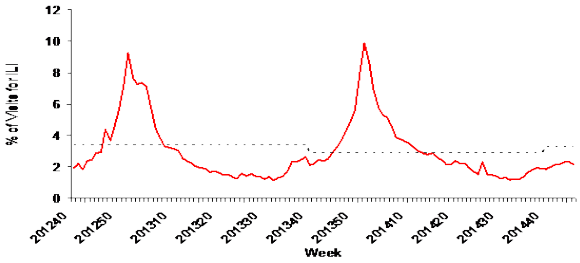


On a regional level, the percentage of outpatient visits for ILI ranged from 0.8% to 2.3% during week 46. All 10 regions reported a proportion of outpatient visits for ILI below their region-specific baseline levels.

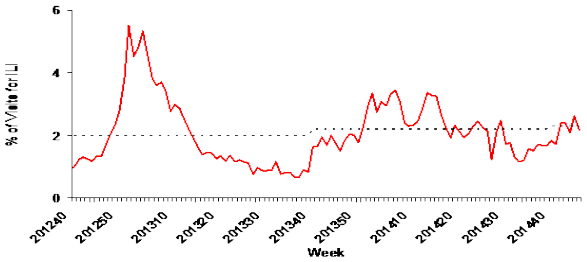
Region 1 - CT, ME, MA, NH, RI, VT



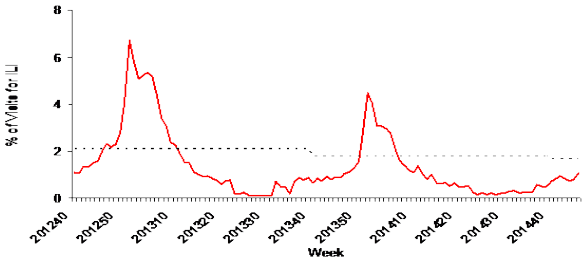
Region 6 - AR, LA, NM, OK, TX



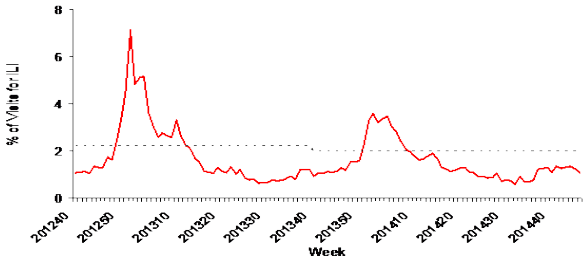
Region 2 - NJ, NY, PR, USVI



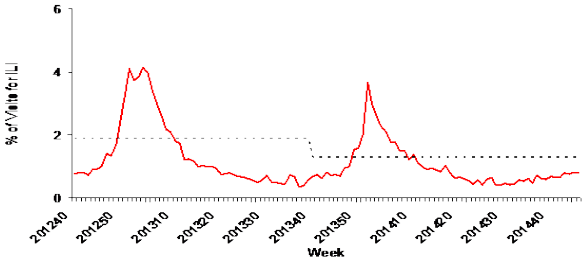
Region 7 - IA, KS, MO, NE



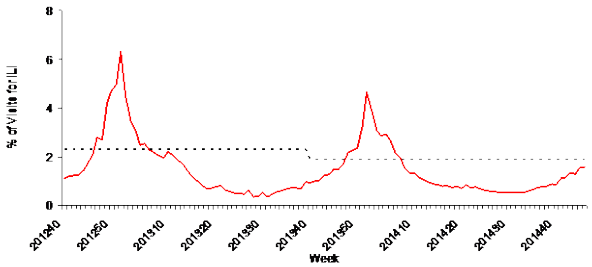
Region 3 - DE, DC, MD, PA, VA, WV



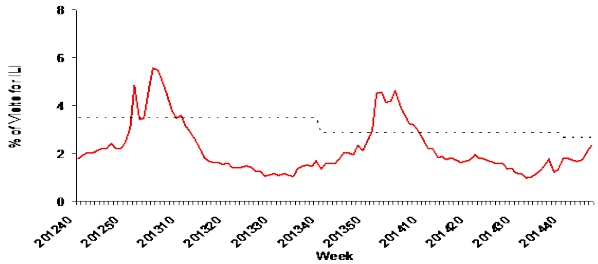
Region 8 - CO, MT, ND, SD, UT, WY



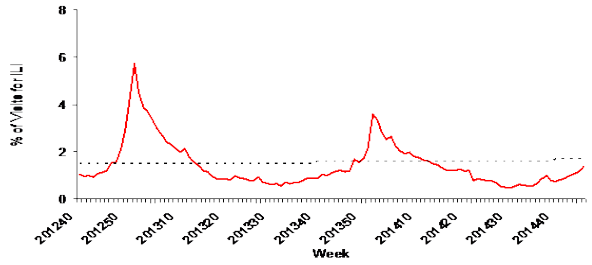
Region 4 - AL, FL, GA, KY, MS, NC, SC, TN



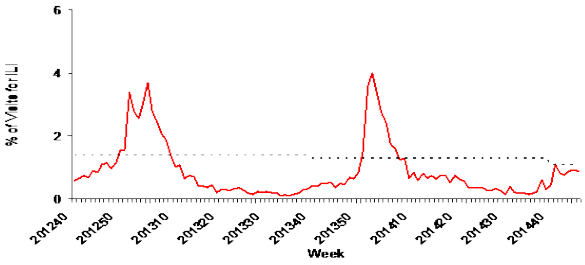
Region 9 - AZ, CA, HI, NV



Region 5 - IL, IN, MI, MN, OH, WI



Region 10 - AK, ID, OR, WA



% ILI Baseline*

NOTE: Scales differ between regions

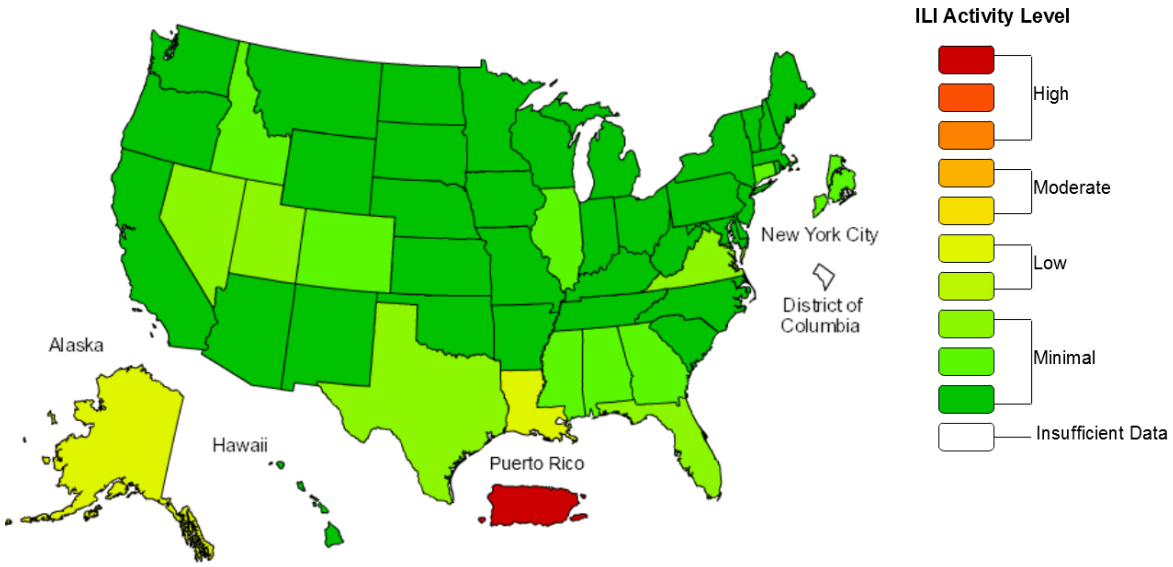
*Use of the regional baselines for state data is not appropriate.

ILINet Activity Indicator Map: Data collected in ILINet are used to produce a measure of ILI activity* by state. Activity levels are based on the percent of outpatient visits in a state due to ILI and are compared to the average percent of ILI visits that occur during weeks with little or no influenza virus circulation. Activity levels range from minimal, which would correspond to ILI activity from outpatient clinics being below, or only slightly above, the average, to high, which would correspond to ILI activity from outpatient clinics being much higher than average.

During week 46, the following ILI activity levels were experienced:

- Puerto Rico experienced high ILI activity.
- Two states (Alaska and Louisiana) experienced low ILI activity.
- New York City and 48 states (Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming) experienced minimal ILI activity.
- Data were insufficient to calculate an ILI activity level from the District of Columbia.

Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2014-15 Influenza Season Week 46 ending Nov 15, 2014

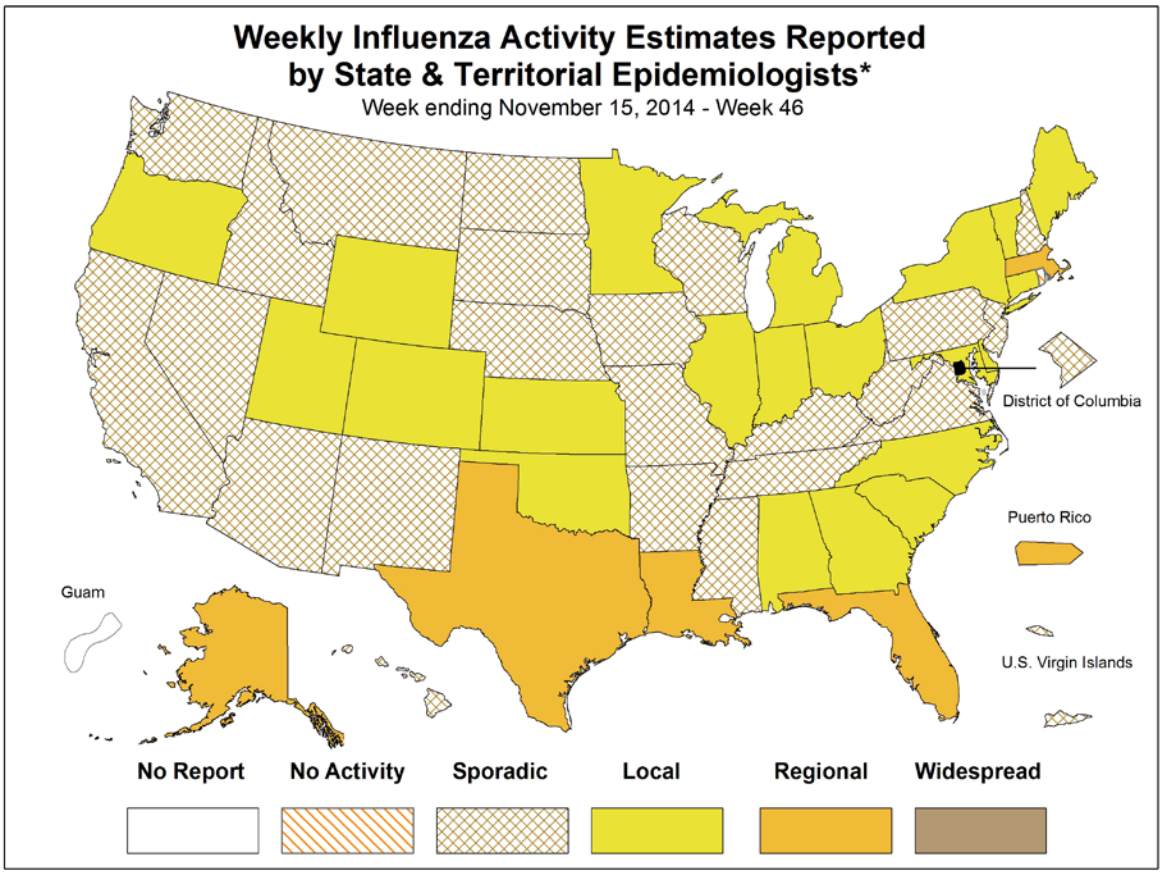


*This map uses the proportion of outpatient visits to health care providers for influenza-like illness to measure the ILI activity level within a state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single city could cause the state to display high activity levels.
Data collected in ILINet may disproportionally represent certain populations within a state, and therefore, may not accurately depict the full picture of influenza activity for the whole state.
Data displayed in this map are based on data collected in ILINet, whereas the State and Territorial flu activity map is based on reports from state and territorial epidemiologists. The data presented in this map is preliminary and may change as more data is received. Differences in the data presented here by CDC and independently by some state health departments likely represent differing levels of data completeness with data presented by the state likely being the more complete.

Geographic Spread of Influenza as Assessed by State and Territorial Epidemiologists: The influenza activity reported by state and territorial epidemiologists indicates geographic spread of influenza viruses, but does not measure the severity of influenza activity.

During week 46, the following influenza activity was reported:

- Regional influenza activity was reported by Puerto Rico and five states (Alaska, Florida, Louisiana, Massachusetts, and Texas).
- Local influenza activity was reported by 21 states (Alabama, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Kansas, Maine, Maryland, Michigan, Minnesota, New York, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Utah, Vermont, and Wyoming).
- Sporadic influenza activity was reported by the District of Columbia, U.S. Virgin Islands, and 23 states (Arizona, Arkansas, California, Hawaii, Idaho, Iowa, Kentucky, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Pennsylvania, South Dakota, Tennessee, Virginia, Washington, West Virginia, and Wisconsin).
- No influenza activity was reported by one state (Rhode Island).
- Guam did not report.



* This map indicates geographic spread & does not measure the severity of influenza activity

Additional National and International Influenza Surveillance Information

FluView Interactive: FluView includes enhanced web-based interactive applications that can provide dynamic visuals of the influenza data collected and analyzed by CDC. These FluView Interactive applications allow people to create customized, visual interpretations of influenza data, as well as make comparisons across flu seasons, regions, age groups and a variety of other demographics. To access these tools, visit www.cdc.gov/flu/weekly/fluviewinteractive.htm.

U.S. State and local influenza surveillance: Click on a jurisdiction below to access the latest local influenza information.

Alabama	Alaska	Arizona	Arkansas	California
Colorado	Connecticut	Delaware	District of Columbia	Florida
Georgia	Hawaii	Idaho	Illinois	Indiana
Iowa	Kansas	Kentucky	Louisiana	Maine
Maryland	Massachusetts	Michigan	Minnesota	Mississippi
Missouri	Montana	Nebraska	Nevada	New Hampshire
New Jersey	New Mexico	New York	North Carolina	North Dakota
Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island
South Carolina	South Dakota	Tennessee	Texas	Utah
Vermont	Virginia	Washington	West Virginia	Wisconsin
Wyoming	New York City	Virgin Islands		

Google Flu Trends: Google Flu Trends uses aggregated Google search data in a model created in collaboration with CDC to estimate influenza activity in the United States. For more information and activity estimates from the United States and worldwide, see http://www.google.org/flutrends/.

World Health Organization: Additional influenza surveillance information from participating WHO member nations is available through FluNet and the Global Epidemiology Reports.

WHO Collaborating Centers for Influenza located in Australia, China, Japan, the United Kingdom, and the United States (CDC in Atlanta, Georgia).

Europe: WHO/Europe at http://www.euroflu.org/index.php and the European Centre for Disease Prevention and Control at http://ecdc.europa.eu/en/publications/surveillance_reports/influenza/Pages/weekly_influenza_surveillance_overview.aspx.

Public Health Agency of Canada: The most up-to-date influenza information from Canada is available at http://www.phac-aspc.gc.ca/fluwatch/.

Public Health England: The most up-to-date influenza information from the United Kingdom is available at https://www.gov.uk/government/statistics/weekly-national-flu-reports.

Any links provided to non-Federal organizations are provided solely as a service to our users. These links do not constitute an endorsement of these organizations or their programs by CDC or the Federal Government, and none should be inferred. CDC is not responsible for the content of the individual organization web pages found at these links.

An overview of influenza surveillance, including a description of the NCHS mortality surveillance data, is available at: http://www.cdc.gov/flu/weekly/overview.htm

Report prepared: November 21, 2014.